Overview
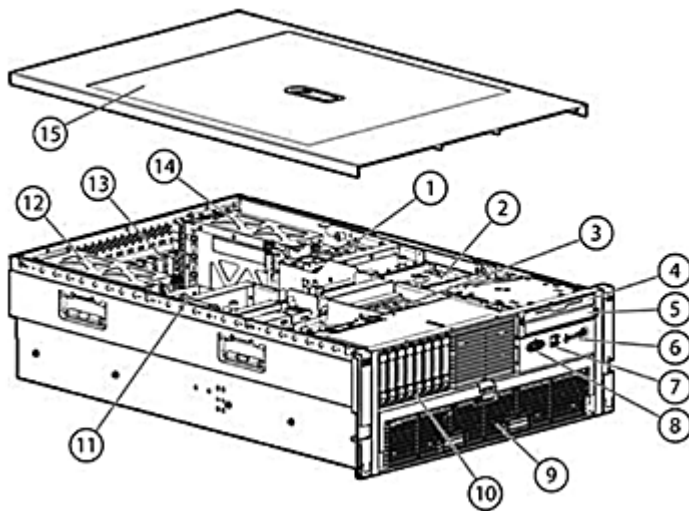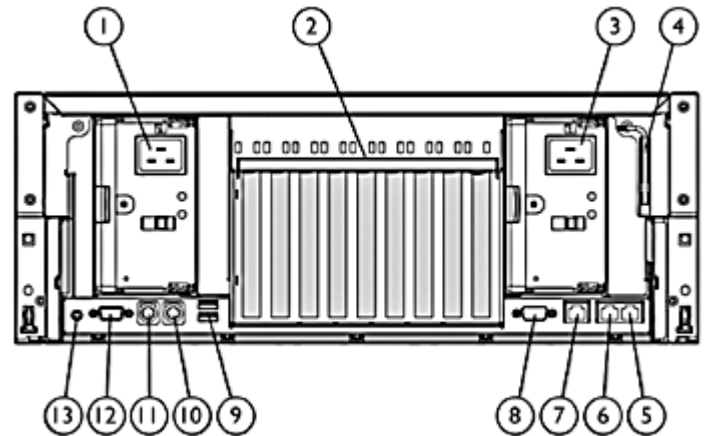
Front View:

1. Hot Plug Redundant Fans (standard)
2. System Insight Display
3. Hot Plug Redundant Fans (standard)
4. 1.44 MB Diskette Drive (optional)
5. DVD/CD-RW drive (standard)
6. Front Panel LED Display (internal and external health, Unit ID light) and Power Button
7. Two USB ports
8. One video port
9. Front accessible processor / memory cage
10. Eight bay Small Form Factor (SFF) Serial Attached SCSI (SAS) drive cage
11. 4U (7" Height) Rack Form Factor
12. Hot Plug Redundant Power Supply
13. Nine PCI I/O Slots (2 64-bit/100MHz PCI-X, 4 PCI-Express x4, 3 PCI-Express x8)
14. Hot Plug Redundant Power Supply
15. Removable Top Access Panel

Rear View:

1. Redundant hot-plug power supply (optional)
2. PCI Express and PCI-X non-hot-plug expansion slots
3. Hot-plug power supply (primary)
4. T-15 Torx screwdriver
5. NIC connector 2
6. NIC connector 1
7. Integrated Lights-Out 2 (iLO 2) connector
8. Serial connector
9. USB connectors (two)
10. Mouse connector
11. Keyboard connector
12. Video connector
13. Rear UID button and LED

What's New

- Support for AMD Opteron 8224SE processor (3.2GHz, 120 watt) CTO option

Overview

At A Glance

The HP ProLiant DL585 G2, the best price/performance x86 4-processor server in the industry, supports the AMD Rev F Opteron Dual-Core processors, further increasing the performance leadership of this system. Dual-Core AMD Opteron processors enable a huge boost in performance over single-core processors.

The HP ProLiant DL585 G2 follows the award winning legacy of the HP ProLiant DL585 by offering exceptional price/performance and price per watt metrics. The ProLiant DL585 G2 continues to maintain price: performance leadership, especially with a variety of 32-bit application benchmarks. The 128 GB memory footprint enables most applications to run faster or support more users than other systems and with the inclusion of Rev F processors the ProLiant DL585 G2 has now been optimized for virtualization. The ProLiant DL585 G2 combines AMD Opteron processor technology, best-in-class management and outstanding uptime features in an enterprise-class system ideal for large data center deployments.

- **Processors**:
  - Dual-Core AMD 8200 Series Processors
- **Memory**:
  - Up to 128 GB of memory, supported by (32) slots of PC2-5300 Registered DIMMs at 667MHz
- **Storage Controller**:
  - HP Smart Array P400/256MB Controller (optional 512MB battery backed write cache)
  - HP Smart Array P400/512MB BBWC Controller standard on some models
- **Internal Drive Support**:
  - Up to 1.168TB (8 x 146GB SFF SAS hot plug drives)
  - Slimline floppy (optional) and slimline DVD/CD-RW (standard) drives
- **Network Controller**:
  - Two embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots**:
  - 9 total slots: (3) x8 PCI-Express; (4) x4 PCI-Express; (2) PCI-X (100MHz)
  - One slot populated with the Smart Array P400 Controller
- **Video Ports**:
  - One front and one rear video ports
- **USB Ports**:
  - (5) Total USB 2.0 Ports: (2) front; (2) rear; (1) internal
- **Redundancy**:
  - Redundant hot plug power supplies and fans
- **Management**:
  - Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - Innovative diagnostic lighting (System Insight Display) for rapid response to service events
- **Form Factor**:
  - Delivering maximum performance in a versatile, rack optimized form factor
- **Deployment/Serviceability**:
  - Tool-less and virtually cable-less internal design
  - Rapid Deployment racking solution (rack rails and cable management)
- **Warranty**:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA0-7461ENW.pdf.

Processor	AMD Opteron Processor 8224SE, Dual-Core (3.2 GHz, 120 Watts)
Two or four of the	**NOTE:** 2 or 4 supported.
following depending on	AMD Opteron Processor 8222, Dual-Core (3.0 GHz, 95 Watts)
Model	**NOTE:** 2 or 4 supported.
	AMD Opteron Processor 8222SE, Dual-Core (3.0 GHz, 120 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8220, Dual-Core (2.8 GHz, 95 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8218, Dual-Core (2.6 GHz, 95 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8216, Dual-Core (2.4 GHz, 95 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8214, Dual-Core (2.2 GHz, 95 Watts)
	NOTE: 2 or 4 supported.
	AMD Opteron Processor 8212, Dual-Core (2.0 GHz, 95 Watts)
	NOTE: 2 or 4 supported.

| **Cache Memory** | 1MB Integrated Level 2 Cache memory per core |

| **Upgradeability** | HP ProLiant DL585 G2 servers can support up to 4 processors. |
| | Upgradeable to quad-core processors (not available at this time) |

| **Chipset** | nVidia NForce Professional 2200 and 2050 chipsets, and AMD-8132 chipset |

| **Memory Protection & Functionality** | Advanced ECC |

Memory	Type	PC2-5300 Registered DIMMs at 667 MHz
	Standard	2 GB (4 x 512 MB)
	One of the following	4 GB (4 x 1 GB)
	depending on Model	8 GB (8 x 1 GB)
	Maximum	128 GB (32 x 4 GB)

| **Network Controller** | Two embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit |

Standard Features

Expansion Slots	Bus speed	Bus number	PCI Voltage	Notes
1	64-bit / 100 MHz PCI-X	Bus 0x42 = 66	3.3 Volt	Half-length Slot
2	64-bit / 100 MHz PCI-X	Bus 0x42 = 66	3.3 Volt	
3	PCI-Express x4	Bus 0x49 = 73		
4	PCI-Express x4	Bus 0x4C = 76		
5	PCI-Express x8	Bus 0x46 = 70		
6	PCI-Express x4	Bus 0x4F = 79		
7	PCI-Express x8	Bus 0x02 = 2		
8	PCI-Express x8	Bus 0x05 = 5		
9	PCI-Express x4	Bus 0x08 = 8		Half-length slot; Reserved slot for Smart Array P400 Controller

NOTE: All slots are non-hot-plug Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number. Slots are enumerated differently based on the operating system. Microsoft operating systems enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Manageability	Integrated Lights-Out 2 (iLO 2) Standard Management (ASIC on the System Board)

Storage Controllers One of the following depending on Model	HP Smart Array P400/256MB Controller (in a PCI-Express slot) **NOTE:** Standard on 2.0GHz and 2.2GHz models. HP Smart Array P400/512MB BBWC Controller (in a PCI-Express slot) **NOTE:** Standard on 2.4GHz, 2.6GHz, 2.8GHz, and 3.0GHz models.

Storage Data Protection

The Battery-Backed Write Cache (BBWC) Enabler for the Smart Array P400 Controller protects up to 512-MB write cache memory from hard boot, power, controller, or system board failures.

- Standard on all HP ProLiant DL585 G2 Models
- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

NOTE: Safely transport your write cache data to another HP ProLiant DL585 G2 in the data center by removing the BBWC Enabler and Smart Array P400 Controller Memory Module simultaneously (connected by short cable).

Storage

Diskette Drive	Optional 1.44 MB Diskette Drive (slimline) - ejectable for security and serviceability
Optical Drive	Slimline DVD/CD-RW Drive Standard on all models - ejectable for security and serviceability
Hard Drives	None ship standard
Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives

Standard Features

Maximum Internal Storage Type	Hot Plug SAS	1.168TB	8 x 146GB SFF SAS drives (internal hot plug)
	Hot Plug SATA	960GB	8 x 120GB SFF SATA (internal hot plug)

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front, 1 rear
	Keyboard	1
	USB 2.0 Ports	2 front, 2 rear, 1 internal
	iLO 2 Remote Management	1
	Network RJ-45	2

Graphics	Integrated ATI-RN50 with 32MB DDR memory

Form Factor	Rack (4U = 7 inches), ships with sliding rails and cable management system
	Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility

ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.

Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit http://www.hp.com/go/hpsim.

HP SIM provides organizations with the following benefits:

- Simplifies and consolidates infrastructure lifecycle management using task and query based functionality
- Provides the foundation for infrastructure automation and virtualization
- Enables IT management based on business processes not hardware platforms
- Lowers infrastructure maintenance cost and frees resources for innovation
- Maximizes resource utilization with virtualization technologies
- Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView

Standard Features

SmartStart	SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart. SmartStart version supported (minimum): SmartStart 7.60.
Insight Management Agents	Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers,
	Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage
Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at http://www.hp.com/servers/smartstart.
Survey Utility and diagnostics utilities	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and ne**eds:**

- **HP Insight Control Environment** - is based on HP Systems Insight Manager and ProLiant Essentials software, and brings the value of Insight Control to ProLiant customers by delivering comprehensive health and performance monitoring, remote control, vulnerability scanning and patch management as well as flexible deployment and power management through an integrated installation package and streamlined licensing. For more information, visit: http://www.hp.com/go/ice
- **Accelerated iSCSI Pack** - enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network

Standard Features

- **Rapid Deployment Pack** (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp.
- **Server Migration Pack - Universal Edition** - Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following:
  - ○ Physical to ProLiant
  - ○ Physical to virtual
  - ○ Virtual to virtual
  - ○ Virtual to ProLiant
- **Performance Management Pack** (offered exclusively through the Insight Control suites) - a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.
- **Virtual Machine Management Pack** - Get the most out of server virtualization by unifying the management of physical and virtual servers in HP Systems Insight Manager. The Virtual Machine Management Pack plug-in provides central management and control of VMware and Microsoft virtual machines and provides physical host to virtual machine association.
- **Vulnerability and Patch Management Pack** (offered exclusively through the Insight Control suites) - identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats.

Optional Remote Management Packs

- **Integrated Lights-Out Advanced Pack** - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication).
- **Integrated Lights-Out Select Pack** - upgrades the iLO 2 processor with enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication) for servers managed using remote consoles available in iLO 2 Standard and iLO 2 Standard Blade Edition

Standard Features

> **NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
> **NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

Industry Standard Compliance	ACPI 1.0a. Compliant
	PCI 2.2 Compliant
	PXE Support
	WOL Support (with embedded NC371i Multifunction Gigabit Network Adapters)
	Physical Address Extension (PAE) Support
	Microsoft® Logo certifications
	USB 2.0 Support

Remote Management   Integrated Lights-Out 2 (iLO 2) Standard Management

- Virtual Text Remote Console (pre OS-only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Integrated Remote Console (ActiveX Control client)
- Dedicated & full function shared network connectivity with VLAN
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- Advanced Encryption Standard (AES) / Triple Data Encryption Standard (3DES)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Intelligent Manageability
HP Systems Insight Manager
SmartStart
Redundant ROM
Remote Flash ROM
Management Agents
Integrated Management Log (IML)
Automatic Server Recovery-2 (ASR-2)
ROM-Based Setup Utility (RBSU)
Dynamic Sector Repairing (with Smart Array Controllers)
Drive Parameter Tracking (with Smart Array Controllers)
Pre-Failure Warranty (covers processors, SAS hard drives and memory)
Redundant/adaptive load balancing NIC Support

Standard Features

Availability	• Smart Array P400 Controller with standard Battery Backed Write Cache (BBWC) Enabler provides transportable data protection and increases overall controller performance. Up to 512MB Battery Backed Write Cache protection available on all HP ProLiant DL585 G2 models. • Up to eight hot-plug SFF SAS Hard Drives • Dual Hot-Plug Redundant Power Supplies • Hot-Plug Redundant Fans (standard) Fans are N+1 hot plug redundant and individually removable.

Serviceability	• System Insight Display - precisely depicts all major subsystems of the server (PCI I/O, Memory, CPU, Redundant Cooling, Interlock, Thermtrip) and gives instant visual indication of fault status. Located on top front of server, beneath lid.
	• Tool-less, virtually cable-less interior design
	    ○ Tool-less access to interior of server
	    ○ Two ejectable, slimline Media Bay media drives (DVD/CD-RW standard with support for optional floppy or optical drives) are removable without the use of tools
	    ○ Front accessible processors and memory
	    ○ PCI Card Guides locks full length PCI cards in place during transit
	    ○ Six individually removable fans connect without cables to the system board
	    ○ Tool-less removal of system board
	• Quick Deploy Rails
	• Tool-less design "snap in" rail

Security	Power-on password Keyboard password Diskette drive control enable/disable Diskette boot control enable/disable External USB port enable/disable Network Server Mode Serial interface control Administrator's password Removable Diskette drive (optional) Removable optical drive
Power Supply	910W (low line), 1300W (high line) with 12V main output. Size is 2.8"(H) X 4.9"(W) X 7.5"(L). **NOTE:** One Hot Plug Power Supply ships standard with 2.0GHz and 2.2GHz models (optional Redundant Hot Plug Power Supply Option Kit). **NOTE:** Two Hot Plug Power Supplies ship standard with 2.4GHz, 2.6GHz, 2.8GHz, and 3.0GHz models.
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html.
Server Power Cords	IEC320-C14 to IEC320-C19 Jumper Cord **NOTE:** The HP ProLiant DL585 G2 servers ship standard with a 6-foot IEC 320-C14 to IEC320-C19 jumper cord.

Standard Features

System Fans	Standard	6 Hot plug, redundant fans (individually removable)
	Maximum	6 Hot plug, redundant fans (individually removable)

Required Cabling

For required cabling information, refer to the HP Web site at
http://h18000.www1.hp.com/products/servers/proliantDL585/

OS Support

Windows Server 2003
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
Sun Solaris
VMware Virtualization Software

NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos.

NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL585 G2, please see: http://www.hp.com/support.

NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix at:
http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html

NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:
http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at:
http://h18004.www1.hp.com/products/servers/software/OEM.html

Rack Airflow Requirements

Rack 10000 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 inches).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/dl585.

Standard Features

Rack Mounting Requirements	HP ProLiant DL585 G2 rack models provide tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000, HP/E series, H9 series and third party racks) with an adjustment range from 24" – 36" in depth. The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

HP ProLiant DL585 G2 in Telco Racks Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (http://www.racksolutions.com/hp/)

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model, please contact your sales representative or go to http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- Support: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service: Installation and Start up only

Standard Features

Enhanced Service - optimize service level to increase IT performance and availability.

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Solutions

Solutions	Designed for enterprise customers with growing data centers and application and Internet service providers that require a rack optimized 4-processor server that delivers maximum performance and high availability for highly complex, business critical applications. Specifically, the HP ProLiant DL585 G2 would be excellent for running the following types of applications:

Typical Usage:

- High Performance Computing (HPC)
- Electronic Design Automation (EDA)/Semiconductor
- Financial
- Large database applications
- ERP / CRM
- Petrochemical
- Life Science and Material Science
- Video Rendering

Models

DL585R02 O3.0GHz-1MB, 8GB, 120W (4P Dual-Core) 448183-001	**Processor(s)**	(4) AMD Opteron Processor 8222SE, Dual-Core (3.0 GHz, 120 Watts)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U
DL585R02 O2.8GHz-1MB, 8GB, 95W (4P Dual-Core) 439727-001	**Processor(s)**	(4) AMD Opteron Processor 8220, Dual-Core (2.8 GHz, 95 Watts)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U

Models

DL585R02 O2.8GHz-1MB, 8GB (4P Dual-Core) 413930-001	**Processor(s)**	(4) AMD Opteron Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U
DL585R02 O2.6GHz-1MB, 4GB (2P Dual-Core) 413929-001	**Processor(s)**	(2) AMD Opteron Processor 8218, Dual-Core (2.6 GHz, 95 Watts) (2 or 4 supported)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	4 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U

Models

DL585R02 O2.4 GHz-1MB, 2GB (2P Dual-core) 413928-001	**Processor(s)**	(2) AMD Opteron Processor 8216, Dual-Core (2.4 GHz, 95 Watts) (2 or 4 supported)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168GB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U

DL585R02 O2.2 GHz-1MB, 2GB (2P Dual-Core) 418550-001 **DL585R02 O2.0 GHz-1MB, 2GB** (2P Dual-Core) 413927-001	**Processor(s)** One of the following depending on Model	(2) AMD Opteron Processor 8214, Dual-Core (2.2 GHz, 95 Watts) (2 or 4 supported) (2) AMD Opteron Processor 8212, Dual-Core (2.0 GHz, 95 Watts) (2 or 4 supported)
	Cache Memory	1 MB Integrated Level 2 Cache
	Memory	4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/256MB Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	One 910W/1300W Power Supply standard (second power supply for redundancy is optional)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration

Models	HP ProLiant DL585 G2 Rack CTO Chassis	418633-B21

Factory Integrated Models ship with:

Two embedded NC371i Multifunction Gigabit Network Adapters
Integrated Lights-Out 2 (iLO 2) Standard management
Six (6) Redundant Hot Plug Fans
One Hot Plug Power Supply
Rack 4U Form Factor

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Processors	AMD Opteron 8224SE 3.2 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit	458932-L21
	AMD Opteron 8222 3.0 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit	458933-L21
	AMD Opteron 8222SE 3.0 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit	448184-L21
	AMD Opteron 8220 2.8 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit	439728-L21
	AMD Opteron 8220SE 2.8 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit	413934-L21
	AMD Opteron 8218 2.6 GHz-1 MB Dual-Core Processor 2P Option Kit	413933-L21
	AMD Opteron 8216 2.4 GHz-1 MB Dual-Core Processor 2P Option Kit	413932-L21
	AMD Opteron 8214 2.2 GHz-1 MB Dual-Core Processor 2P Option Kit	416734-L21
	AMD Opteron 8212 2.0 GHz 1 MB Dual-Core Processor 2P Option Kit	413931-L21

NOTE: If four processors are desired, select one 413931-L21 and one 413931-B21.

Base Memory	1 GB REG PC2-5300 (2 x 512 MB) single rank	408850-B21
	2 GB REG PC2-5300 (2 x 1 GB) single rank	408851-B21
	4 GB REG PC2-5300 (2 x 2 GB) dual rank	408853-B21
	8 GB REG PC2-5300 (2 x 4 GB) dual rank	408854-B21

NOTE: Memory must be ordered in like-pairs, i.e. two of the same size.

NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 667 MHz.

Configuration Information - Factory Integrated Models

Storage Controllers	HP Smart Array P800/512 BBWC Controller	381513-B21
	HP Smart Array P600/256 BBWC Controller	337972-B21
	HP Smart Array P600/512 BBWC Controller, Factory Integrated Only	432103-B21
	HP Smart Array P400/256MB Controller	405132-B21
	HP Smart Array P400/512MB BBWC Controller	411064-B21
	HP 8 Internal Port SAS HBA with RAID	347786-B21
	HP Smart Array 6404/512 FIO CNTRLR	452240-B21

Optical Drives	Slimline CD-RW/DVD-ROM 24X Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
	NOTE: Optical drives are ejectable.	

Step 3: Choose Additional Options for Factory Integration

NOTE: Select from "Options" section below.

Options

NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

HP ProLiant DL585 G2 Unique Options	AMD Opteron 8224SE 3.2 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit	458932-B21
	AMD Opteron 8222 3.0 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit	458933-B21
	AMD Opteron 8222SE, Dual-Core Processor (3.0 GHz, 120 Watts) 2P Option Kit	448184-B21
	AMD Opteron 8220, Dual-Core Processor (2.8 GHz, 95 Watts) 2P Option Kit	439728-B21
	AMD Opteron 8220SE, Dual-Core Processor (2.8 GHz, 120 Watts) 2P Option Kit	413934-B21
	AMD Opteron 8218, Dual-Core Processor (2.6 GHz, 95 Watts) 2P Option Kit	413933-B21
	AMD Opteron 8216, Dual-Core Processor (2.4 GHz, 95 Watts) 2P Option Kit	413932-B21
	AMD Opteron 8214, Dual-Core Processor (2.2 GHz, 95 Watts) 2P Option Kit	416734-B21
	AMD Opteron 8212, Dual-Core Processor (2.0 GHz, 95 Watts) 2P Option Kit	413931-B21

ProLiant Essentials Offerings	**ProLiant Essentials Value Pack**	
	NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.	

Accelerated iSCSI Pack

ProLiant Essentials Accelerated iSCSI Pack, No Media, Single License   452679-B21
NOTE: For use with a single NIC port. Contains one license with a unique license activation key and documentation.
NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.html

HP Insight Control Environment

HP Insight Control Environment, No Media 1-Server License including 1 year of   452148-B21
24x7 Technical Support and Updates
NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html

ProLiant Essential RDMA Pack

HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server   452681-B21
Adapters, No Media, 1-Server License
NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12573_na/12573_na.html

Rapid Deployment Pack

ProLiant Essentials Rapid Deployment Pack No Media 1-Server License   452151-B21
including 1 year of 24x7 Technical Support and Updates
NOTE: This license allows 1 server to be deployed and managed via RDP.
NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.html

HP Server Migration Pack - Universal Edition

HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited   460756-B21
Migration License, including 1 year of 24x7 Technical Support and Updates
NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Contains one license with a unique license activation key and documentation.

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to   460750-B21
ProLiant Single Migration License, including 1 year of 24x7 Technical Support

Options

and Updates
NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates	460753-B21

NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

Virtual Machine Management Pack

ProLiant Essentials Virtual Machine Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	452153-B21

NOTE: Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.
NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.html

Remote Management

NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.

Integrated Lights-Out Advanced Pack

Integrated Lights-Out Advanced Pack, No Media ,1 Server License	452141-B21

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_na/10861_na.html

Integrated Lights-Out Select Pack

Integrated Lights-Out Select Pack, No Media, 1 Server License	452158-B21

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_na/10861_na.html

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

Options

Processors		
	AMD Opteron 8224SE 3.2 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit	458932-B21
	AMD Opteron 8222 3.0 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit	458933-B21
	AMD Opteron 8222SE, Dual-Core Processor (3.0 GHz, 120 Watts) 2P Option Kit	448184-B21
	AMD Opteron 8220, Dual-Core Processor (2.8 GHz, 95 Watts) 2P Option Kit	439728-B21
	AMD Opteron 8220SE, Dual-Core Processor (2.8 GHz, 120 Watts) 2P Option Kit	413934-B21
	AMD Opteron 8218, Dual-Core Processor (2.6 GHz, 95 Watts) 2P Option Kit	413933-B21
	AMD Opteron 8216, Dual-Core Processor (2.4 GHz, 95 Watts) 2P Option Kit	413932-B21
	AMD Opteron 8214, Dual-Core Processor (2.2 GHz, 95 Watts) 2P Option Kit	416734-B21
	AMD Opteron 8212, Dual-Core Processor (2.0 GHz, 95 Watts) 2P Option Kit	413931-B21

Memory (DIMMs)		
	1 GB REG PC2-5300 (2 x 512 MB) single rank	408850-B21
	2 GB REG PC2-5300 (2 x 1 GB) single rank	408851-B21
	4 GB REG PC2-5300 (2 x 2 GB) dual rank	408853-B21
	8 GB REG PC2-5300 (2 x 4 GB) dual rank	408854-B21

Diskette Drive		
	Slimline Floppy Diskette Drive Option Kit	390164-B21
	NOTE: Ejectable drive.	

Optical Drives		
	Slimline CD-RW/DVD-ROM Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
	Slimline CD-ROM Drive 24X	356963-B21

Hard Drives

SFF SATA Hard Disk Drives – Hot Plug

	HP 120GB 1.5G SATA 5.4K SFF HDD	431786-B21
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21

NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
http://h18000.www1.hp.com/products/quickspecs/11940_na/11940_na.html

SFF SAS Hard Disk Drives – Hot Plug

	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 36GB 3G SAS 10K SFF SP HDD	375859-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21

NOTE: Please see the SFF SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html

Options

Storage Controllers	**SCSI Controllers for External Drive/Storage Support**	
	Smart Array 6402/128 Controller	273915-B21
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 642 Controller	291967-B21
	128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
	NOTE: This 128MB BBWC supports the Smart Array 642 Controller.	
	Ultra320 Expansion Module for SA-6402	273911-B21
	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	SCSI HBA	
	HP SC11Xe Host Bus Adapter	412911-B21

NOTE: Please see the following QuickSpecs for Technical Specifications and
additional information:
http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.html
(Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.html
(Smart Array 642)
http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.html
(U320 SCSI G2 HBA)
http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html
(SC11Xe HBA)

SAS Controller

Smart Array E500 Controller

	HP Smart Array E500/256MB Controller	435129-B21

Smart Array P400 Controller

	HP Smart Array P400/256MB Controller	405132-B21
	NOTE: The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
	HP Smart Array P400/512MB BBWC Controller	411064-B21
	NOTE: The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
	512MB DDR BBWC Upgrade	405148-B21
	NOTE: For Smart Array P400 Controller only. **NOTE:** If you install the 512MB DDR BBWC as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP Smart Array P400 24 Inch Battery Cable Kit).	
	Battery-backed write cache upgrade	383280-B21
	NOTE: For Smart Array P400 Controller only. **NOTE:** If you install the Battery-backed write cache as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP Smart Array P400 24 Inch Battery Cable Kit).	

Smart Array P600 Controller

	HP Smart Array P600/256 BBWC Controller	337972-B21
	NOTE: The Smart Array P600 Controller supports internal and external Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
	512 MB DDR BBWC Upgrade	372538-B21
	NOTE: For Smart Array P600 Controller only.	

Smart Array P800 Controller

	HP Smart Array P800/512 BBWC Controller	381513-B21

Options

NOTE: Please see the following Controller QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html (Smart Array E500 Controller)
http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html (Smart Array P400 Controller)
http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.html (Smart Array P600 Controller)
http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html (Smart Array P800 Controller)

SAS HBA

HP SC44Ge Host Bus Adapter	416096-B21
HP 8 Internal Port SAS HBA with RAID	347786-B21

NOTE: Please see the following QuickSpecs for additional information:
http://h18004.www1.hp.com/products/quickspecs/12617_na/12617_na.html (SC44Ge HBA)
http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html (SAS HBA)

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	NOTE: Does not support Windows 2000.	
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	NOTE: Does not support Windows 2000.	
	NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.	
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21
	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21
	HP IB 4X DDR PCI-e Dual Port HCA	409376-B21
	HP IB 4X DDR PCI-e SINGLE PORT HCA	448398-B21

Options

Redundant Options	910W (low line), 1300W (high line) Hot Plug Redundant Power Supply – includes Nema 5-15P to IEC320-C19	348114-001
	910W (low line), 1300W (high line) Hot Plug Redundant Power Supply – includes C14 to C19 IEC cable	348114-B21

NOTE: If you require a local power cord, please check the Power Specifications below for the appropriate power cord, or consult the Power Cord Matrix: http://www.hp.com/go/powercordmatrix.

Tape Drives	**NOTE:** For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	

USB Tape Drives

HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB drive	AG703A

SAS Tape Drives

NOTE: For the DL585 G2, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

HP StorageWorks LTO-1 Ultrium 232 Internal Tape Drive (Carbonite)	DW064A

NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 SCSI Tape Drive (Carbonite)	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one LTO-3 Ultrium 920	EH903A
HP StorageWorks 3U SCSI Rack-mount kit with one LTO-3 Ultrium 960 (Carbonite)	Q1595B
HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive	EH926A

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items: http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html

NOTE: For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U SCSI Rack-Mount kit	A7445B

NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, DLT VS160, LTO-1 Ultrium 232, LTO-2 Ultrium 448 and LTO-3 Ultrium 920 tape drives.

Options

	HP StorageWorks 1U USB Rack-Mount Kit	A8007A
	NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 tape drives.	
	HP StorageWorks 1U SAS Rack-Mount Kit	AE459A
	NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the LTO-2 Ultrium 448 SAS and LTO-3 Ultrium 920 SAS tape drives.	
	HP StorageWorks 3U Rack-mount kit	274338-B22
	NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DLT VS160, SDLT 600, LTO-1 Ultrium 232, LTO-2 Ultrium 460, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960 and LTO-4 Ultrium 1840 tape drives.	
	NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits: http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML	

HP D2D Backup System	HP StorageWorks D2D110 Backup System	EH880A
	NOTE: 1TB of Disk Storage	
	HP StorageWorks D2D110 Backup System with Data Protector Express Software Kit	EH923A
	NOTE: 1TB of Disk Storage	
	HP StorageWorks D2D120 Backup System	EH884A
	NOTE: 2TB of Disk Storage	
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit	EH924A
	NOTE: 2TB of Disk Storage	
	NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12651_na/12651_na.HTML	

Tape Autoloaders	**HP StorageWorks DAT Autoloader**	
	HP StorageWorks DAT 72x10 tape autoloader	AE313B
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 LTO-3 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 LTO-2 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 LTO-1 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit	AH166A
	NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	
	NOTE: Please reference the Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs	

QuickSpecs

Options

Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library	AJ034A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
	HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 448 SCSI Drive Library	AG320A
	HP StorageWorks MSL4048 1 Ultrium 920 SAS Drive Library	AH560A
	HP StorageWorks MSL4048 1 Ultrium 920 SCSI Drive Library	AH171A
	HP StorageWorks MSL4048 1 Ultrium 960 SCSI Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
	HP StorageWorks MSL8096 Tape Library	
	HP StorageWorks MSL8096 2 Ultrium 920 SAS Drive Library	AH561A
	HP StorageWorks MSL8096 2 Ultrium 960 4GB FC Library	AH218A
	HP StorageWorks MSL8096 2 Ultrium 960 SCSI Drive Library	AH219A
	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ039A
	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 4GB FC Library	AJ040A
	HP StorageWorks MSL6000 Tape Library	
	LTO-4 Ultrium 1840 technology	
	HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ029A
	HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 4GB FC Library	AJ030A
	HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ031A
	HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 4GB FC Library	AJ032A
	LTO-3 Ultrium 960 technology	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B

Options

Cluster Options		
	ProLiant Cluster Starter Kit	364023-B22
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html	
	ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
	NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html	
	HP Serviceguard for Linux ProLiant Cluster, A.11.18 (2 license version - Red Hat EL 4&5, SUSE SLES10)	305199-B27
	HP Serviceguard for Linux, A.11.18 (single license version - Red Hat EL 4&5, SUSE SLES10)	307754-B27
	HP Serviceguard for Linux and Red Hat Global File System – 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System – 3 years subscription	T2798AA#003
	NOTE: For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html	

StorageWorks Options		
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A

HP StorageWorks Modular Smart Array 20		
	HP StorageWorks Modular Smart Array 20	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	

Options

HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB **NOTE:** Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB **NOTE:** Rack-mountable 14 drive enclosure with dual bus, redundant power supplies **NOTE:** The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure **NOTE:** Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.html	364430-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 **NOTE:** Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.html	335880-B21
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 **NOTE:** Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.html	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf **NOTE:** Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
Uninterruptible Power Systems – Rack	HP, R1.5kVA UPS, 1U	AF419A
	HP R3000 VA UPS, 2U, L5-30	AF422A
	HP R3000 VA UPS, 2U, L6-20	AF423A
	HP R5500 VA UPS	AF426A

Options

HP Monitored Power Distribution Unit (PDU)	**HP Monitored Power Distribution Unit: Full Rack Version**	
	HP 17.3 kVA S2324 Monitored PDU – dual input, 3U, 24A	AF503A
	HP 8.3 kVA S1324 Monitored PDU – single input, 3U, 24A	AF504A
	HP 16.6 kVA S2140 Monitored PDU – dual input, 1U, 40A	AF505A
	HP 8.6 S1140 Monitored PDU – single input, 1U, 40A	AF506A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A	AF916A
	HP 4.9kVA S124 Monitored PDU – single input, 1U, 24A	AF914A

Modular Power Distribution Units 1U/0U (Up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) **NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) **NOTE:** This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) **NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPS R3000 XR. For North America, need to order cable PN 340653-001.	252663-B24
	NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html	

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	USB 2.0 4-port HUB	DG954A
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
	NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.html **NOTE:** For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	

Options

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet – Pallet	AF001A
	10642 G2 (42U) Rack Cabinet – Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet – Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet – Pallet	AF011A
	10636 G2 (36U) Rack Cabinet – Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet – Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP Rack 10000 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22

NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML (Worldwide)

NOTE:NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

QuickSpecs

Options

Keyboards and Monitors	TFT7210R Rack Mounted 17" Monitor	348373-B21
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.	

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter – 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x4 Server Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Options

Service and Support Offerings (HP Care Pack Services)	**Hardware Services On-site Service**

Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4607E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4608E

Hardware Services 6-Hour Call to Repair On-site Service

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4609E

Installation & Start-up Services

Hardware Installation, Electronic	U4617E
Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4618E

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4619E

Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4620E
Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6316E
Onsite HW support 24x7, 4hr response and Red Hat AS Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U9239E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack.

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models."

HP ProLiant DL585 G2 2P Models

Standard Memory

4 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz or
2 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz with Advanced ECC

At least one pair of DIMMs must be installed in slots 1A and 2A to operate the server. Observe the following DIMM installation guidelines to add additional memory to the server:

- DIMMs must be installed in pairs.
- DIMM installed on the same memory bank must have the same part number.
- DIMMs installed in different banks can be of different sizes.
- DIMMs must be installed in decreasing capacity with the largest DIMMs installed in the banks furthest away from each processor.
- DIMM banks are active only when the corresponding processor socket is populated.

NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 667 MHz.

The following memory options are available from HP:
- 1 GB REG PC2-5300 (2 x 512 MB) single rank   408850-B21
- 2 GB REG PC2-5300 (2 x 1 GB) single rank   408851-B21
- 4 GB REG PC2-5300 (2 x 2 GB) dual rank   408853-B21
- 8 GB REG PC2-5300 (2 x 4 GB) dual rank   408854-B21

Standard Memory Configuration (2.0GHz, 2.2GHz and 2.4GHz models) Total Memory = 2 GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty

Standard Memory Configuration (2.6GHz model) Total Memory = 4 GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty

QuickSpecs

Memory

Standard Memory Configuration (2.8GHz models) **Total Memory = 8 GB**								
	1 (Slot furthest from processor)	**2**	**3**	**4**	**5**	**6**	**7**	**8** (Slot closest to processor)
Processor 1 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty

Examples of other optional configurations include, but are not limited to:

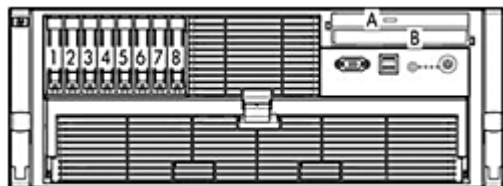| **Example #1: Optional Memory Configuration with DIMM mixing** Standard Memory plus Optional Memory and Processors **Total Memory = 34 GB**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Processor 1 Memory Bus	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB	512 MB	512 MB
Processor 2 Memory Bus	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB	512 MB	512 MB
Processor 3 Memory Bus	2 GB	2 GB	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB
Processor 4 Memory Bus	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB	512 MB	512 MB
Example #2: Optional Memory Configuration with Partial Bus Population Standard Memory plus Optional Memory and Processors **Total Memory = 8 GB**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Processor 1 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Example #3: Maximum Memory Configuration Maximum Memory (Standard replaced with Optional Memory) **Total Memory = 128 GB**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Processor 1 Memory Bus	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Processor 2 Memory Bus	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Processor 3 Memory Bus	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Processor 4 Memory Bus	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Storage

A		Ejectable: Slimline Diskette or Optical Drive (Optional)
B		Ejectable: Slimline Optical Drive (DVD/CD-RW Standard)
1-8		SFF SAS Internal Drive cage

Drive Support

	Quantity Supported	Position Supported	Controller
Ejectable Slimline Drives			
1.44-MB slimline Diskette Drive	Up to 1	A or B Based on Boot Device Selector Switch	Integrated
IDE slimline CD-ROM Drive	Up to 2	A or B	Integrated IDE
IDE Slimline DVD-ROM Drive (8X/24X)	Up to 2	A or B	Integrated IDE
IDE Slimline CD-RW/DVD-ROM Combo Drive	Up to 2	A or B	Integrated IDE
IDE DVD±R/RW 8X Drive	Up to 2	A or B	Integrated IDE

Hard Drives

SATA – Hot Plug Drives

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K 60GB 1.5G SATA 5.4K	Up to 8	1-8	HP Smart Array E500/256MB Controller HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

Storage

SFF SAS – Hot Plug Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP	Up to 8	1-8	HP Smart Array E500/256MB Controller
72GB 3G SAS 10K SP			HP Smart Array P400/256MB Controller
72GB 3G SAS 15K SP			HP Smart Array P400/512MB BBWC Controller
36GB 3G SAS 10K SP			HP Smart Array P600/256 BBWC Controller
36GB 3G SAS 15K SP			HP Smart Array P800/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	1 per SCSI VHDCI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller
Modular Smart Array 30 Family	Up to 13	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 50 Enclosure	2 per connector (supports 1+1 cascading)	External	HP Smart Array P600/256 BBWC Controller
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/MSA1000
Modular Smart Array 1500 cs	Please see the Modular Smart Array 1500 cs QuickSpecs to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/MSA1500cs

Maximum Storage Capacity – (External Enclosure Attached)

Internal	1.168TB (8 x 146GB SFF SAS Drives)
External	5.840TB (2 MSA50 Enclosures 20 drives per enclosure x 146GB SFF SAS Drives)
Total	7.008TB

Tape Drives, Tape Autoloaders, and Tape Libraries

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/north_america/10233.html

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed

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HP ProLiant DL585 Generation 2

Storage

below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/north_america/10809.html
NOTE: For complete listing of tape drive offerings see
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html
NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-2 Ultrium 460 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 DLT VS160 SDLT 600 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives, External LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS 1U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter **NOTE:** Recommended.	416096-B21
		HP Smart Array E500 Controller	435129-B21
		NOTE: The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support:	
		HP Smart Array P400/256MB Controller	405132-B21
		HP Smart Array P400/512MB Controller	411064-B21
HP StorageWorks SCSI Tape Automation, External **DAT 72x10 Autoloader** **1/8 Tape Autoloader** MSL2024 MSL4048 MSL8096 MSL6000	External	HP SC11Xe Host Bus Adapter	412911-B21
		HP U320e SCSI Host Bus Adapter **NOTE:** Only valid for MSL tape libraries.	AH627A

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Storage

HP StorageWorks SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP SC44Ge Host Bus Adapter **NOTE:** Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	416096-B21
HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048 MSL6000	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks D2D Backup Systems D2D110 D2D120	External	Embedded Network Controller	N/A

Power Specifications

Part number	348114-001
Operational Input Voltage Range (Vrms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	910	910	1300	1300	1300	1300
Nominal Input Current (A rms)	11.9	10.2	7.7	7.3	6.9	6.6
Max Rated Input Wattage Rating (Watts)	1163	1148	1566	1566	1548	1548
Max. Rated VA (Volt-Amp)	1186	1172	1598	1598	1579	1579
Efficiency (%)	80	81	83	83	84	84
Power Factor	0.98		0.98			
Leakage Current (mA)	0.43	0.50	0.90	0.96	1.00	1.04
Max. Inrush Current (A peak)	100	100	100	100	100	100
Max. Inrush Current duration (mS)	10					

*NOTE: – To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at url: http://h30099.www3.hp.com/configurator/powercalcs.asp
To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL585 G2
- Click on: "Power Calculator" link. (You may need to scroll down to see it)
- There are certain Dual-core, lowline, max configurations that are not supported. All highline configurations are supported. Consult the Power Calculator to determine if your lowline configuration is supported.

Standard Rack Model Power Cords / Jumper Cords	Description
	IEC320-C14 to IEC320-C19 Jumper Cord

Optional Country Power Cords and Jumper Cords	Description	Option Kit Part Number
	Nema 5-15P to IEC320-C19	235603-001
	Nema 6-20P to IEC320-C19	235604-001
	Nema L6-20P to IEC320-C19, 20A, 250V, US	340653-001
	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 6 ft/2.0m)	313227-B21
	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 8 ft/2.5m)	291034-B21
	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 10 ft/3.0m)	310927-B21
	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 12ft/3.7m)	313228-B21
	IEC320-C19 to IEC320-C20 Jumper (16A, IEC, 8ft/2.5m)	295633-B22

QuickSpecs

Technical Specifications

System Unit	**Dimensions** (H x W x D) 6.94 x 19 x 26.5 in (17.6 x 48.3 x 67.3 cm) (with bezel)		
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	95 lb (43 kg)
		Minimum (one hard drive, power supply, and processor installed)	79 lb (36 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 200 VAC)
	BTU Rating	Maximum	3985 BTU/hr (at 100 VAC), 5457 BTU/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20 Calculator%20Catalog.xls	
		● Click on the system of interest. Example: DL585 G2 ● Follow the instructions of the next screens	
	Power Supply Output (per power supply)	Rated Steady-State Power	910 W (at 100 VAC), 1300 W (at 200 VAC)
		Maximum Peak Power	960 W (at 100 VAC), 1420 W (at 200 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

QuickSpecs

Technical Specifications

Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise		Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).
	Idle	
	L WAd	7.7 B
	L pAm	58 dBA
	Operating	
	L WAd	7.7 B
	L pAm	58 dBA

24X Max (or higher) IDE CD-ROM Drive Slim Line Disk	Applicable Disk	CD-DA, CD-ROM (Mode 1 and 2)
		CD-XA, CD-I (Mode 2, Form 1 and 2)
		Photo CD (Single and Multi-session)
		Mixed Mode (Audio and Data combined)
	Capacity	540 MB (Mode 1, 12 cm)
		650 MB (Mode 2, 12 cm)
	Diameter	4.7 x 3.15 in (12 x 8 cm)
	Rotational Speed	4200 rpm maximum
	Center Hole	0.6 in/15 mm diameter
	Thickness	1.2 mm
	Track Pitch	1.6 µm
Block Size	Mode 1	2,048
	Mode 2	2,340, 2,336, 1,024 bytes
	CD-DA	2,352 bytes
	CD-XA	2,328 bytes
Interface	IDE (ATAPI)	
Access Times (typical)	Random	100 ms
	Full-Stroke	2000 ms
Audio Output Level	Line-Out	0.7 Vrms at 47 kOhms
	Headphone	0.6 Vrms at 32 kOhms (maximum volume)
Data Transfer Rate	Sustained	150 KB/s (sustained 1X)
	Burst	2100 to 3600 KB/s
Cache Buffer	128 KB	
Start-up Time (typical)	< 7seconds	
Stop Time	< 4seconds	

Technical Specifications

Laser Parameters	Type	Semiconductor Laser GaA1As
	Wave Length	780 ± 25 nm
	Divergence Angle	53.5° ± 1.5°
	Output Power	0.14 mW
Operating Conditions	Temperature	41° to 113° F (5° to 45° C)
	Humidity	10% to 80%
Dimensions	(HxWxD, maximum)	1.69 x 5.75 x 8.19 in (4.29 x 15 x 20.8 cm)
	Weight	2.66 lb (1.2 kg)

Slimline CD-RW/DVD-ROM 24X Combo Drive	**Shipping Dimensions**	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)		
	Shipping Weight	5 lb (2.27 kg)		
	Disk	Applicable Disk	DVD-ROM	
			DVD-R (Read Only)	
			2.6 GB/side DVD-RAM (Read Only)	
			5.2 GB/side DVD-RAM (Read Only)	
			CD-ROM Mode-1 data disc	
			CD-ROM Mode-2 data disc	
			CD Audio disc	
			CD-Extra	
			CD-RW	
			CD-R	
			CD Text	
			PhotoCD	
			CD-I (mode 2)	
			CD-I Ready	
			CD-Bridge	
		Capacity	DVD-ROM	DVD-SL 4.7 GB/side
				DVD-DL 8.5 GB/side
				Double Sided 9.40 GB/side
			DVD-R	3.95 GB/side
			DVD-RAM	2.6 GB/side and 5.2 GB/
			CD-ROM	Mode-1 650 MB (550 MB)
				Mode-2 742 MB (640 MB)
		Block Size	DVD	2,048 bytes
			CD	2,352 (Mode-0)
				2352, 2340, 2336, 2048 bytes (Mode-1)
				2352, 2340, 2336, 2048 bytes (Mode-2)

Technical Specifications

	Diameter	120 mm, 80 mm (with adapter at vertical mounting mode)	
Loading Mechanism	Tray type		
Interface	EIDE (ATAPI)		
Access Times (typical)	Random	DVD-ROM < 120 ms, CD-ROM < 110 ms	
	Full-Stroke	DVD-ROM < 240 ms, CD-ROM < 160 ms	
Audio Output Level (typical)	Line-out	CD 0.7 Vrms at 47 Kohms Load	
Data Transfer Rate (sustained)	DVD-ROM	Single Layer	10.8 MB/sec. Max.
	DVD-RAM	2.77 MB/sec. Max	
	CD-ROM	7.2 MB/sec. Max.	
Cache Buffer	2 MB		
Spin-up Time (typical)	less than 10 seconds		
MTBF	120,000 Power On Hours (POH)		
Ambient Temperature	Operating	-22° to 140° F (-30° to 60° C)	
Relative Humidity	Operating	10% to 80%	
	Storage/Transportation	5% to 95%	
Dimensions	(HxWxD, maximum)	0.5 x 5.04 x 5.1 in (12.7 x 128 x 129.4 mm)	
Option Kit Contents	DVD-ROM drive with installation guide, warranty card, registration card		

Integrated Lights-Out 2 Standard (integrated on system board)	**Architecture**	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	Processor	32-bit RISC processor core running at 66 MHz
	Upgradeability	Option firmware upgradeable via flash ROM
	Video Support	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
	Interfaces	One Ethernet network connection (10/100 Mb/s)
	Memory	2-MB Flash ROM
		8-MB SDRAM
	Operating System Support	Windows 2000 Server
		Windows 2000 Advanced Server
		Red Hat 7.x
		SuSE 7.0
	Client Browser Support	Microsoft Internet Explorer 5.5 or later.
	iLO 2 Standard Features	Virtual Text Remote Console
		Virtual KVM
		Virtual Power Button Control
		Virtual UID Control
		Power Regulator Control
		Dedicated LAN Connectivity
		Secure access using web browser

Technical Specifications

		Secure access using Secure Shell (SSH) client
		Serial connectivity
		Automatic IP Configuration via DHCP/DNS/WINS
		Industry Standard 128-bit Secure Sockets Layer (SSL) Security
		IML and iLO2 Event Logging
		Support for up to 12 user accounts with customizable access privileges
	iLO Advanced Features (optional)	Virtual Graphical Remote Console
		Virtual Floppy/USB Key drive
		Virtual CD-ROM drive
		Directory Services Integration
		Processor States Reporting
		Terminal Services Integration

Smart Array P400 Controller	**Disk Drive and Enclosure Interface**	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	2TB
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature

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Technical Specifications

Two embedded NC371i Multifunction Gigabit Server Adapters	Network Interface Compatibility	10/100/1000-T	
		IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.